

CLAIMS

1. A medicament comprising a combination of a recombinant antibody which specifically binds to human CC chemokine receptor 4 (CCR4) or an antibody fragment thereof and at least one agent.

2. A medicament for administering a combination of a recombinant antibody which specifically binds to CCR4 or an antibody fragment thereof and at least one agent.

3. A medicament for administering a recombinant antibody which specifically binds to CCR4 or an antibody fragment thereof and at least one agent either simultaneously or successively.

4. The medicament according to any one of the claims 1 to 3, which is an antitumor drug.

5. The medicament according to the claim 4, wherein the tumor is a tumor in which CCR4 is expressed.

6. The medicament according to the claim 5, wherein the tumor in which CCR4 is expressed is a hematopoietic organ tumor.

7. The medicament according to any one of the claims 1 to 6, wherein the recombinant antibody which specifically binds to CCR4 or the antibody fragment thereof is an antibody which specifically binds to an extracellular region of CCR4 and does not show a reactivity to a human platelet.

8. The medicament according to the claim 7, wherein

the recombinant antibody which specifically binds to the extracellular region of CCR4 or the antibody fragment thereof does not have an activity of inhibiting binding of TARC (thymus and activation-regulated chemokine) or MDC (macrophage-derived chemokine) as a CCR4 ligand to CCR4.

9. The medicament according to the claim 7 or 8, wherein the extracellular region is an extracellular region selected from the group consisting of 1 to 39, 98 to 112, 176 to 206 and 271 to 284 of an amino acid sequence represented by SEQ ID No. 1.

10. The medicament according to any one of the claims 7 to 9, wherein the extracellular region is an epitope existing at positions 2 to 29 of the amino acid sequence represented by SEQ ID No. 1.

11. The medicament according to any one of the claims 7 to 10, wherein the extracellular region is an epitope existing at positions 13 to 29 of the amino acid sequence represented by SEQ ID No. 1.

12. The medicament according to any one of the claims 7 to 11, wherein the extracellular region is an epitope existing at positions 13 to 25 of the amino acid sequence represented by SEQ ID No. 1.

13. The medicament according to the claim 12, wherein in the recombinant antibody which specifically binds to CCR4 or the antibody fragment thereof, a binding activity to a peptide

comprising 13 to 25 of the amino acid sequence represented by SEQ ID No. 1 in which at least one of tyrosine residues 16, 19, 20 and 22 is sulfated is lower than a binding activity to a peptide comprising 13 to 25 of the amino acid sequence represented by SEQ ID No. 1.

14. The medicament according to any one of the claims 1 to 13, wherein the recombinant antibody which specifically binds to the extracellular region of CCR4 or the antibody fragment thereof is an antibody which specifically reacts with an epitope recognized by a monoclonal antibody which hybridoma KM2160 (FERMBP-10090) produces or an antibody fragment thereof.

15. The medicament according to any one of the claims 1 to 14, wherein the human recombinant antibody is a human chimeric antibody or a human CDR-grafted antibody.

16. The medicament according to the claim 15, wherein the human chimeric antibody comprises complementarity determining regions (CDRs) of a heavy chain (H chain) variable region (V region) and a light chain (L chain) V region of a monoclonal antibody which specifically binds to CCR4.

17. The medicament according to the claim 15 or 16, wherein the human chimeric antibody comprises CDR1, CDR2 and CDR3 of a heavy chain (H chain) variable region (V region) of an antibody comprising amino acid sequences represented by SEQ ID Nos. 5, 6 and 7 and/or CDR1, CDR2 and CDR3 of a light chain (L chain) variable region (V region) of an antibody comprising

amino acid sequences represented by SEQ ID Nos. 8, 9 and 10, respectively.

18. The medicament according to the claims 15 to 17, wherein the human chimeric antibody comprises a heavy chain (H chain) variable region (V region) of an antibody molecule comprising an amino acid sequence represented by SEQ ID No. 11 and/or a light chain (L chain) V region of an antibody molecule represented by SEQ ID No. 12.

19. The medicament according to the claim 15, wherein the human CDR-grafted antibody comprises complementarity determining regions (CDRs) of a heavy chain (H chain) variable region (V region) and a light chain (L chain) V region of a monoclonal antibody which specifically binds to CCR4.

20. The medicament according to the claim 15 or 19, wherein the human CDR-grafted antibody comprises CDR1, CDR2 and CDR3 of a heavy chain (H chain) variable region (V region) of an antibody comprising amino acid sequences represented by SEQ. ID Nos. 5, 6 and 7 and/or CDR1, CDR2 and CDR3 of a light chain (L chain) V region comprising amino acid sequences represented by SEQ ID Nos. 8, 9 and 10, respectively.

21. The medicament according to any one of the claims 15, 18 and 20, wherein the human CDR-grafted antibody comprises a heavy chain (H chain) variable region (V region) of an antibody molecule comprising an amino acid sequence represented by SEQ ID No. 16 or 17 and/or a light chain (L chain) V region of an

antibody molecule represented by SEQ ID No. 18.

22. The medicament according to any one of the claims 1 to 21, wherein the agent is a protein or an agent having low-molecular weight.

23. The medicament according to the claim 22, wherein the protein is a cytokine or an antibody.

24. The medicament according to the claim 23, wherein the cytokine is a cytokine selected from G-CSF, M-CSF, interferon- α , IL-2 and IL-15.

25. The medicament according to any one of the claims 1 to 24, wherein the agent having low-molecular weight is a chemotherapeutic agent or a hormone therapeutic agent.

26. The medicament according to the claim 25, wherein the chemotherapeutic agent is an agent selected from vincristine, cyclophosphamide, etoposide and Methotrexate.